

**CECOS**  
INTERNATIONAL

5092 Aber Road  
Williamsburg, Ohio 45176  
513/724-6114

June 8, 2015

Mr. Brian Freeman  
United States Environmental Protection Agency  
Region 5, Attn: DRE-9J  
77 West Jackson Boulevard  
Chicago, IL 60604-3590

**RE: Administrative Order on Consent, O&M Progress Report No. 38  
CECOS International, Inc. Docket No. V-W-024-94  
EPA I.D. No. OHD 087 433 744**

Dear Mr. Bardo:

As required by Section VIII.E and XIV. 6 of the above referenced Consent Order, CECOS International, Inc. (CECOS) is submitting to Region 5 of the United States Environmental Protection Agency (U.S. EPA) the O&M Progress Report for the period of December 2014 through May 2015. This progress report has been formatted to conform to the requirements of Attachment A to the Consent Order and is being submitted on a semi-annual basis as requested in U.S. EPA's August 4, 1998 letter approving the CMI CC Report.

1. Description of CMI O&M Activities Completed:

A. General O&M Activity:

During the months of December 2014 through May 2015, CECOS maintained the CMI area in accordance with the CMI O&M Manual. The CMI groundwater gradient control pumps were not operated this period in accordance with the approval from U.S. EPA to shut down the gradient control system.

B. Leachate/Groundwater Pumping:



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During the six-month period covered by this report, 44,629 gallons of leachate were pumped from the CMI area. No CMI groundwater was pumped or shipped off-site for disposal. A total of 43,779 gallons of CMI leachate were shipped directly offsite for disposal, including purge water from the quarterly monitoring well and underdrain sampling activities.

At the Leachate Treatment System (LTS), 148,292 gallons of leachate influent was added to the system this period. A total of 160,425 gallons of LTS effluent were produced along with 275 gallons of solids. A total of 153,042 gallons of treated leachate were shipped off site during the period. The primary source of the leachate treated at the LTS was 121,196 gallons of leachate that was pumped from the closed RCRA disposal units to the Leachate Accumulation Points (LAPs) from December 2014 through May 2015. A total of 115,225 gallons of leachate was transferred from the LAPs to the LTS. A summary of the leachate and groundwater pumping for the period is included as Exhibit No. 1. Another 29,104 gallons of leachate was pumped during the period using the vacuum truck from sumps, discharge lines, side risers, and other miscellaneous locations.

**C. Groundwater Monitoring:**

A CMI Post Shutdown Monitoring Event was conducted in April 2015. Sampling of wells outside of the slurry wall was scheduled for the COI/TCL parameter list.

**D. Reports and Other Submissions:**

The 37<sup>th</sup> O&M Progress Report for CMI operations at Aber Road was submitted to U.S. EPA on December 8, 2014.

**2. Summary of Findings:**

Data validation was performed this period on groundwater samples collected during the October 2014 CMI monitoring event. In October 2014, no COI compounds were confirmed detected at any sampling location outside the slurry wall. Wells located both inside and outside the slurry wall were sampled during the October 2014 sampling event. Well samples were analyzed for the COI/TCL list of parameters as required by the revised CMI O&M Manual. The data validation summary reports for the October 2014 monitoring event is included in this report in Exhibit No. 4.



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Of the confirmed valid detections for COIs found inside the slurry wall during the October 2014 event, six (6) were at or above the Cleanup Standards listed in the CMI O&M Manual. Detections above the Cleanup Standards were observed at well MP-246 for 1,1-Dichloroethene, 1,2-Dichloroethane, Tetrachloroethylene, and Trichloroethylene. Vinyl Chloride was also found in underdrain U-12 at a level above the Cleanup Standard and the compound 1,2-Dichloroethane was confirmed above the Cleanup Standard in well MP-222B. Benzene was confirmed above the Action Level, but below the Cleanup Standard in well MP-222B. A summary list of the detected COIs and the validated levels detected in October 2014 are included in Attachment 4-1 of Exhibit No. 4. In addition to the above, a "J" value for Vinyl Chloride was reported in MP-246 slightly above the Cleanup Standard. A "J" value for Vinyl Chloride was also reported in MP-219A above the Action Level, but below the Cleanup Standard. No other COI detections above the Cleanup or Action Level Standards were observed in the CMI monitoring wells.

3. Summary of CMI Changes:

None.

4. Summary of Contacts:

None.

5. Summary of Problems:

None.

6. Actions to Rectify Problems:

None.

7. Changes in Key Project Personnel:

None.

8. Projected Work for Next Period:

A. Continue leachate management activities.





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- B. Continue CMI operations and maintenance.
- C. Perform CMI Post Shutdown Monitoring in October 2015.

9. Copies of Reports, Data, Etc.:

- A. A summary of leachate management activities, including volumes of leachate pumped, treated, and shipped off-site is included in Exhibit No. 1.
- B. A summary of groundwater head levels across the slurry wall for April 2015 are included in Exhibit No. 2. While the groundwater gradient control wells are shut down, the performance standard for groundwater gradient levels across the slurry wall does not apply.
- C. Information regarding methane gas monitoring, leachate level measurements and leachate pumping activity at the Sanitary Landfill is included in Exhibit No. 3. Recent VOC analytical results for monitoring well MP-290B are also included in Exhibit No. 3. In January 2015, two COI compounds were detected above the reporting limit, but less than the Cleanup Standard, in well MP-290B. This included Chloroethane at 12 ug/L and cis-1,2-Dichloroethene at 2.8 ug/L. In April 2015, Chloroethane (12 ug/L) and cis-1,2-Dichloroethene (2.8 ug/L) were detected again at levels below the Cleanup Standard listed in the CMI O&M Manual. An estimated value below the lab reporting limit was identified in MP-290B for Vinyl Chloride in April (1.1 ug/L).
- D. A data validation report prepared by SCS Engineers for the October 2014 CMI sampling event is presented in Exhibit No. 4.
- E. The report entitled "Exhibit 5 - Corrective Measures Implementation Performance Monitoring Evaluation" prepared by Eagon & Associates is included as Exhibit No. 5. This report includes additional data items requested by U.S. EPA to supplement the reporting requirements of the CMI O&M Manual.

10. Other items.

None.



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If you have any questions or comments, please feel free to contact the Aber Road facility at (513) 724-6114.

Sincerely:  
CECOS International, Inc.



Dan Deborde  
Project Coordinator

CY: S. Rabolt, Clermont County  
M. Gibson, Eagon & Associates  
G. Saylor, SCS Engineers  
T. Hull, Ohio EPA SWDO  
File M.3.3



**DOCUMENT CERTIFICATION****DOCUMENT NAME: O&M PROGRESS REPORT No. 38**

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to evaluate the information submitted. I certify that the information contained in or accompanying this submittal is true, accurate, and complete. As to those identified portion(s) of this submittal for which I cannot personally verify the accuracy, I certify that this submittal and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature: \_\_\_\_\_

Name: Dan DebordeTitle: Project CoordinatorDate: June 8, 2015

**EXHIBIT NO. 1**

## **CMI Semi-Annual O&M Report**

### **Leachate/Groundwater Volumes (Gallons)**

#### **CMI Leachate/Groundwater Summary**

Month	Leachate Pumped	Transferred	GW Pumped	GW Shipped Offsite
Dec-14	6,307	5,000	0	0
Jan-15	11,566	13,829	0	0
Feb-15	5,000	5,000	0	0
Mar-15	5,867	4,950	0	0
Apr-15	11,754	10,000	0	0
May-15	4,135	5,000	0	0
<b>Total</b>	<b>44,629</b>	<b>43,779</b>	<b>0</b>	<b>0</b>

#### **Leachate Treatment (LTS) Summary**

Month	LTS Influent	LTS Effluent	Solids Produced	Leachate Shipped
Dec-14	18,836	20,387	165	25,000
Jan-15	21,700	23,789	0	25,000
Feb-15	26,425	28,897	0	25,000
Mar-15	28,020	30,162	0	20,000
Apr-15	32,061	34,180	0	40,000
May-15	21,250	23,010	110	18,042
<b>Total</b>	<b>148,292</b>	<b>160,425</b>	<b>275</b>	<b>153,042</b>



# CMI Semi-Annual O&M Report

## Leachate/Groundwater Volumes (Gallons)

### Leachate Accumulation Point (LAP) Summary

#### December-14

Tank	Leachate Pumped	Transfer to LTS	Standpipes
T-104	1,146	775	L-25, 26, 27
T-105	7,280	5,550	L-34, 35, 36
T-108	3,014	2,325	L-20, 21/22, 23/24
T-109	1,336	975	L-15, 18, 19
T-110	656	475	L-16, 17
T-111	2,475	1,850	L-5, 6, 11, 14
T-112	5,437	3,575	L-3, 4, 7, 8, 9, 10, 12, 13
<b>Total</b>	<b>21,344</b>	<b>15,525</b>	

#### January-15

Tank	Leachate Pumped	Transfer to LTS	Standpipes
T-104	784	1,250	L-25, 26, 27
T-105	5,825	8,625	L-34, 35, 36
T-108	2,491	3,675	L-20, 21/22, 23/24
T-109	1,004	1,525	L-15, 18, 19
T-110	684	925	L-16, 17
T-111	1,667	2,425	L-5, 6, 11, 14
T-112	3,990	6,150	L-3, 4, 7, 8, 9, 10, 12, 13
<b>Total</b>	<b>16,445</b>	<b>24,575</b>	

#### February-15

Tank	Leachate Pumped	Transfer to LTS	Standpipes
T-104	402	375	L-25, 26, 27
T-105	3,515	3,275	L-34, 35, 36
T-108	1,335	1,225	L-20, 21/22, 23/24
T-109	610	575	L-15, 18, 19
T-110	315	300	L-16, 17
T-111	822	750	L-5, 6, 11, 14
T-112	2,519	2,075	L-3, 4, 7, 8, 9, 10, 12, 13
<b>Total</b>	<b>9,518</b>	<b>8,575</b>	

**March-15**

Tank	Leachate Pumped	Transfer to LTS	Standpipes
T-104	915	725	L-25, 26, 27
T-105	8,431	6,400	L-34, 35, 36
T-108	4,207	3,400	L-20, 21/22, 23/24
T-109	1,965	1,675	L-15, 18, 19
T-110	1,325	1,100	L-16, 17
T-111	1,958	1,425	L-5, 6, 11, 14
T-112	5,510	4,425	L-3, 4, 7, 8, 9, 10, 12, 13
<b>Total</b>	<b>24,311</b>	<b>19,150</b>	

**April-15**

Tank	Leachate Pumped	Transfer to LTS	Standpipes
T-104	1,173	1,050	L-25, 26, 27
T-105	9,404	7,100	L-34, 35, 36
T-108	5,136	4,875	L-20, 21/22, 23/24
T-109	4,024	3,875	L-15, 18, 19
T-110	2,335	2,350	L-16, 17
T-111	1,927	1,900	L-5, 6, 11, 14
T-112	5,780	6,300	L-3, 4, 7, 8, 9, 10, 12, 13
<b>Total</b>	<b>29,779</b>	<b>27,450</b>	

**May-15**

Tank	Leachate Pumped	Transfer to LTS	Standpipes
T-104	1,054	975	L-25, 26, 27
T-105	8,920	9,950	L-34, 35, 36
T-108	2,556	2,750	L-20, 21/22, 23/24
T-109	1,440	700	L-15, 18, 19
T-110	795	400	L-16, 17
T-111	1,283	1,475	L-5, 6, 11, 14
T-112	3,751	3,700	L-3, 4, 7, 8, 9, 10, 12, 13
<b>Total</b>	<b>19,799</b>	<b>19,950</b>	

**EXHIBIT NO. 2**

**APRIL 2015 GRADIENT ANALYSIS  
CECOS INTERNATIONAL, INC. ABER ROAD FACILITY**

Location	Zone	Nested Pair Number	Top of Casing Elevation (ft., MSL)	Depth to Water (ft.)	Ground-Water Elevation (ft., MSL)	Elevation Differential (ft.)
USPZ-1	US	1	908.00	5.01	902.99	-0.07
MP-303B	US		906.24	3.32	902.92	
880PZ-1	880	2	908.49	5.55	902.94	-3.20
MP-208	880		907.57	7.83	899.74	
880PZ-2	880	3	907.11	4.50	902.61	2.66
MP-305A	880		908.11	2.84	905.27	
880PZ-3	880	4	915.45	10.20	905.25	-0.56
MP-238AR	880		916.36	11.67	904.69	
880PZ-4	880	5	909.45	6.33	903.12	-1.06
MP-304A	880		908.42	6.36	902.06	
880PZ-5	880	6	914.42	10.23	904.19	-5.19
MP-241AR	880		916.39	17.39	899.00	

*Notes:*

*A positive differential indicates an inward gradient*

*US=Upper Sand Zone*

*880=880 Sand Zone*

*Water Levels Measured April 6, 2015*

*Wells USPZ-1 and 880PZ-1 through -5 are located inside the slurry wall.*

*Wells MP-303B, MP-208, MP-305A, MP-238AR, MP-304A, and MP-241AR are located outside the slurry wall.*



**EXHIBIT NO. 3**

## MEMORANDUM

TO: Dan Deborde  
FROM: Doug Kattwinkel  
SUBJECT: Sanitary Landfill System Report for the Month of December 2014  
DATE: January 8, 2015

### Gas System Operation

The system was operational 1\* day out of a possible 31 days. The system operated a total 2 hours for the month out of a possible 744 hours. The gas system operation averages for the month of December are 20.1% methane and 901°F flare temperature. \*Approximate runtime flare down frequently due to low gas production.

1. Explosive Gas Monitoring System: Gas monitoring for the semi-annual was completed November 21, 2014.
2. Gas Wells: The gas wells are functioning correctly with regular pumping of condensate drains.
3. Header Lines: The header lines are functioning correctly.
4. Condensate Drains: All the condensate drains (CD) are working properly.
5. Knock Out Pot: The knock out pot remained dry the entire month.
6. Blower: The blower is functioning correctly.
7. Electric Controls: All electric controls are working properly.
8. Flare Assembly: The flare assembly is working correctly.

### Cap Maintenance

Landfill cap in good condition.

### Sanitary Leachate Collection System

The sanitary landfill dewatering system was operational all days during the month of December. The monthly summary for leachate levels are attached for your review.

A total of 72,000 gallons of sanitary leachate was shipped off site for disposal at Valicor during the month of December. All leachate wells are functioning. The leachate head levels remain below the approved alternate levels.

DK/dd

Cy: File (H.6)

**LEACHATE HEAD LEVELS**  
December 2014

WELL	DATE: 12/2/14	DATE: 12/9/14	DATE: 12/16/14	DATE: 12/22/14	DATE: 12/30/14
1	1.9	1.8	1.7	2.0	17.8/1.7 B
2	1.2	1.7	1.7	1.9	1.4
3	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned
4	1.9	1.8	1.8	1.8	1.8
5	2.0	1.5	1.7	1.8	2.1
6	1.7	1.5	1.5	1.5	1.7
7	2.0	1.0	1.6	1.6	2.0
8	1.1	1.5	1.5	1.5	1.5
9	1.5	1.9	1.8	1.8	1.5
10	1.7	1.7	1.7	1.7	1.3
11	1.9	1.7	1.7	1.6	1.9
12	1.1	1.1	1.1	1.1	1.1
13	1.5	1.5	1.5	1.5	1.5
14	2.2	1.0	1.7	1.7	1.4
15	1.8	1.6	1.5	1.5	1.6
16	2.0	1.6	1.7	1.7	1.8
17	1.4	1.7	1.6	1.8	1.3
18	3.0/2.0 A	1.7	1.5	3.0/1.8 A	1.9
19	1.5	1.5	1.5	1.5	2.5
20	1.2	1.7	1.6	1.6	1.2
21	1.8	1.6	1.4	1.9	1.7
22	1.5	1.6	1.6	1.6	1.6
23	1.5	1.4	1.5	1.5	1.5
24	1.4	1.4	1.4	1.4	1.4
1B	1.8	1.5	1.5	1.8	11.8/1.4 B
2B	1.8	1.7	1.7	2.0	1.7

A - Reset Coyote  
B - Reset Electric Breaker

## MEMORANDUM

**TO:** Dan Deborde  
**FROM:** Doug Kattwinkel  
**SUBJECT:** Sanitary Landfill System Report for the Month of January 2015  
**DATE:** February 3, 2015

### Gas System Operation

The system was operational 1\* day out of a possible 31 days. The system operated a total 2 hours for the month out of a possible 744 hours. The gas system operation averages for the month of January are 19.2% methane and 780°F flare temperature. \*Approximate runtime flare down frequently due to low gas production.

1. Explosive Gas Monitoring System: Gas monitoring for the semi-annual was completed November 21, 2014.
2. Gas Wells: The gas wells are functioning correctly with regular pumping of condensate drains.
3. Header Lines: The header lines are functioning correctly.
4. Condensate Drains: All the condensate drains (CD) are working properly.
5. Knock Out Pot: The knock out pot remained dry the entire month.
6. Blower: The blower is functioning correctly.
7. Electric Controls: All electric controls are working properly.
8. Flare Assembly: The flare assembly is working correctly.

### Cap Maintenance

Landfill cap in good condition.

### Sanitary Leachate Collection System

The sanitary landfill dewatering system was operational all days during the month of January. The monthly summary for leachate levels are attached for your review.

A total of 84,000 gallons of sanitary leachate was shipped off site for disposal at Valicor during the month of January. All leachate wells are functioning. The leachate head levels remain below the approved alternate levels.

DK/dd

Cy: File (H.6)



**LEACHATE HEAD LEVELS**  
**January 2015**

WELL	DATE: 1/6/15	DATE: 1/14/15	DATE: 01/20/15	DATE: 01/27/15
1	2.0	2.0	1.9	1.9
2	1.7	1.9	1.1	1.7
3	Abandoned	Abandoned	Abandoned	Abandoned
4	1.7	1.9	1.8	1.9
5	2.0	2.1	2.2	2.1
6	1.6	1.6	1.6	1.6
7	2.0	2.0	2.0	2.0
8	1.5	1.0	1.0	1.0
9	1.5	1.4	1.5	1.5
10	1.7	1.4	1.3	1.4
11	2.1	2.1	2.0	2.0
12	1.1	1.1	1.1	1.1
13	1.7	1.7	1.7	1.9
14	2.1	1.5	1.9	1.6
15	1.7	1.7	1.7	1.7
16	2.0	1.6	2.1	2.0
17	1.4	1.5	1.4	1.4
18	1.7	1.8	1.8	1.8
19	1.5	1.6	1.5	1.7
20	1.2	4.6/1.4 A	1.2	3.6/1.3 A
21	2.0	1.8	1.9	1.4
22	1.9	1.5	1.5	1.6
23	1.5	1.5	1.5	1.5
24	1.4	1.4	1.5	1.4
1B	1.7	3.5/1.3 A	2.0	1.4
2B	1.8	1.7	1.4	1.8

A - Reset Coyote

## MEMORANDUM

**TO:** Dan Deborde  
**FROM:** Doug Kattwinkel  
**SUBJECT:** Sanitary Landfill System Report for the Month of February 2015  
**DATE:** March 6, 2015

### Gas System Operation

The system was operational 1\* day out of a possible 28 days. The system operated a total 2 hours for the month out of a possible 672 hours. The gas system operation averages for the month of February are 17.9% methane and 741°F flare temperature. \*Approximate runtime flare down frequently due to low gas production.

1. Explosive Gas Monitoring System: Gas monitoring for the semi-annual was completed November 21, 2014.
2. Gas Wells: The gas wells are functioning correctly with regular pumping of condensate drains.
3. Header Lines: The header lines are functioning correctly.
4. Condensate Drains: All the condensate drains (CD) are working properly.
5. Knock Out Pot: The knock out pot remained dry the entire month.
6. Blower: The blower is functioning correctly.
7. Electric Controls: All electric controls are working properly.
8. Flare Assembly: The flare assembly is working correctly.

### Cap Maintenance

Landfill cap in good condition.

### Sanitary Leachate Collection System

The sanitary landfill dewatering system was operational all days during the month of February. The monthly summary for leachate levels are attached for your review.

A total of 59,600 gallons of sanitary leachate was shipped off site for disposal during the month of January. Valicor disposed of 18,000 gallons and the Lower East Fork WWTP disposed of 41,600 gallons of sanitary leachate during the month. All leachate wells are functioning. The leachate head levels remain below the approved alternate levels.

DK/dd

Cy: File (H.6)

**LEACHATE HEAD LEVELS**  
February 2015

WELL	DATE: 2/3/15	DATE: 2/10/15	DATE: 2/17/15	DATE: 2/24/15
1	1.5	2.0	1.7	1.7
2	1.2	1.3	1.9	1.2
3	Abandoned	Abandoned	Abandoned	Abandoned
4	1.8	1.9	1.8	1.9
5	2.1	2.2	2.1	2.2
6	1.7	1.7	1.7	1.7
7	2.1	2.1	2.0	2.0
8	1.0	1.0	1.0	1.0
9	1.5	1.5	1.5	1.6
10	1.4	2.0	1.5	1.5
11	1.8	1.7	1.9	2.0
12	1.1	1.1	1.1	1.1
13	2.2	1.5	1.6	1.8
14	2.2	2.2	2.3	2.1
15	1.7	1.6	1.8	1.7
16	2.0	2.1	2.0	2.2
17	1.4	1.4	1.4	1.4
18	1.8	1.8	1.9	1.9
19	1.8	1.8	1.9	2.3
20	1.1	3.6/1.6 A	4.3/1.5 A	3.9/1.3 A
21	2.3	1.4	1.9	1.9
22	1.7	1.6	1.7	1.7
23	1.5	1.5	1.5	1.5
24	1.4	1.4	1.4	1.4
1B	1.8	1.9	1.9	1.7
2B	1.8	1.7	1.8	1.8

A - Reset Coyote

B - Installed a New Pump

## MEMORANDUM

**TO:** Dan Deborde  
**FROM:** Doug Kattwinkel  
**SUBJECT:** Sanitary Landfill System Report for the Month of March 2015  
**DATE:** April 2, 2015

### Gas System Operation

The system was operational 1\* day out of a possible 31 days. The system operated a total 2 hours for the month out of a possible 744 hours. The gas system operation averages for the month of February are 19.7% methane and 601°F flare temperature. \*Approximate runtime flare down frequently due to low gas production.

1. Explosive Gas Monitoring System: Gas monitoring for the semi-annual was completed November 21, 2014.
2. Gas Wells: The gas wells are functioning correctly with regular pumping of condensate drains.
3. Header Lines: The header lines are functioning correctly.
4. Condensate Drains: All the condensate drains (CD) are working properly.
5. Knock Out Pot: The knock out pot remained dry the entire month.
6. Blower: The blower is functioning correctly.
7. Electric Controls: All electric controls are working properly.
8. Flare Assembly: The flare assembly is working correctly.

### Cap Maintenance

Landfill cap in good condition.

### Sanitary Leachate Collection System

The sanitary landfill dewatering system was operational all days during the month of March. The monthly summary for leachate levels are attached for your review.

A total of 161,500 gallons of sanitary leachate was shipped off site for disposal during the month of March. Valicor disposed of 113,500 gallons and the Lower East Fork WWTP disposed of 48,000 gallons of sanitary leachate during the month. All leachate wells are functioning. The leachate head levels remain below the approved alternate levels.

DK/dd

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**LEACHATE HEAD LEVELS**  
**March 2015**

WELL	DATE: 3/3/15	DATE: 3/10/15	DATE: 3/17/15	DATE: 3/25/15
1	1.7	1.7	2.1	2.0
2	2.0	2.2	1.2	11.0/1.2 A
3	Abandoned	Abandoned	Abandoned	Abandoned
4	1.9	1.9	1.9	1.9
5	2.2	2.0	2.2	2.1
6	1.6	1.6	1.6	1.6
7	2.0	2.1	2.1	2.1
8	1.0	1.0	1.0	1.0
9	1.5	1.5	1.5	1.5
10	1.5	1.3	1.5	1.4
11	1.7	1.7	2.0	2.2
12	1.1	1.1	1.1	1.1
13	4.0/1.7 A	1.8	1.7	1.8
14	2.2	5.2/1.4 A	1.4	1.7
15	2.0	5.8/1.5 A	1.5	1.7
16	2.2	2.2	2.3	2.0
17	1.4	1.4	1.6	1.4
18	1.9	1.8	1.9	1.9
19	1.5	1.5	1.5	1.5
20	4.2/1.6 A	1.3	1.4	1.6
21	1.8	2.2	2.2	2.0
22	1.5	1.6	1.9	1.7
23	1.5	1.5	1.5	1.5
24	1.4	1.4	1.4	1.4
1B	1.6	1.7	3.5/1.5 A	1.5
2B	1.8	1.8	1.8	1.8

A - Reset Coyote  
B - Line Plugged/Reset

Installed new pump in well #6 and cleared plugged line on 3-12.

## MEMORANDUM

**TO:** Dan Deborde  
**FROM:** Doug Kattwinkel  
**SUBJECT:** Sanitary Landfill System Report for the Month of April 2015  
**DATE:** April 30, 2015

### Gas System Operation

The system was operational 1\* day out of a possible 30 days. The system operated a total 2 hours for the month out of a possible 720 hours. The gas system operation averages for the month of April are 21.5% methane and 1170°F flare temperature. \*Approximate runtime flare down frequently due to low gas production.

1. Explosive Gas Monitoring System: Gas monitoring for the semi-annual was completed November 21, 2014.
2. Gas Wells: The gas wells are functioning correctly with regular pumping of condensate drains.
3. Header Lines: The header lines are functioning correctly.
4. Condensate Drains: All the condensate drains (CD) are working properly.
5. Knock Out Pot: The knock out pot remained dry the entire month.
6. Blower: The blower is functioning correctly.
7. Electric Controls: All electric controls are working properly.
8. Flare Assembly: The flare assembly is working correctly.

### Cap Maintenance

Landfill cap in good condition.

### Sanitary Leachate Collection System

The sanitary landfill dewatering system was operational all days during the month of April. The monthly summary for leachate levels are attached for your review.

A total of 156,000 gallons of sanitary leachate was shipped off site for disposal during the month of April. All 156,000 gallons were disposed at the Lower East Fork WWTP. All leachate wells are functioning. The leachate head levels remain below the approved alternate levels.

DK/dd  
Cy: File (H.6)

**LEACHATE HEAD LEVELS**  
**April 2015**

WELL	DATE: 4/1/15	DATE: 4/7/15	DATE: 4/14/15	DATE: 4/21/15	DATE: 4/28/15
1	1.9	2.1	2.0	2.2	2.2
2	1.2	1.2	17.2/1.2 A	3.5/1.2 A	1.2
3	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned
4	1.7	1.8	1.9	1.9	1.9
5	2.1	2.2	2.2	2.2	2.2
6	1.6	1.6	1.6	1.6	1.6
7	2.0	2.0	2.1	2.0	6.6/2.0 B
8	1.0	1.0	1.0	1.0	1.0
9	1.5	1.4	1.5	1.5	1.5
10	1.3	2.0	1.3	1.3	1.3
11	1.8	1.8	2.0	2.0	2.0
12	1.1	1.1	1.1	1.1	1.1
13	1.9	1.8	1.7	1.7	1.8
14	1.8	1.2	1.2	1.9	1.8
15	1.6	1.7	1.7	1.7	1.9
16	1.5	2.0	2.0	2.0	2.0
17	1.4	1.5	1.5	1.4	1.4
18	1.8	1.9	1.9	1.9	1.9
19	1.5	1.5	1.5	1.6	1.5
20	1.4	1.3	1.1	5.0/1.6 A	4.0/1.2 A
21	2.0	2.0	2.0	2.2	1.7
22	1.7	1.8	1.9	1.5	1.5
23	1.5	1.5	1.5	1.5	1.5
24	1.4	1.4	1.4	1.5	1.4
1B	1.5	2.0	1.5	1.5	1.5
2B	2.0	1.8	1.9	1.8	1.8

A - Reset Coyote  
B - Repaired Electric Wires

## MEMORANDUM

**TO:** Dan Deborde  
**FROM:** Doug Kattwinkel  
**SUBJECT:** Sanitary Landfill System Report for the Month of May 2015  
**DATE:** June 1, 2015

### Gas System Operation

The system was operational 1\* day out of a possible 31 days. The system operated a total 1.5 hours for the month out of a possible 744 hours. The gas system operation averages for the month of May are 26% methane and 991°F flare temperature. \*Approximate runtime flare down frequently due to low gas production.

1. Explosive Gas Monitoring System: Gas monitoring for the semi-annual was completed May 28, 2015.
2. Gas Wells: The gas wells are functioning correctly with regular pumping of condensate drains.
3. Header Lines: The header lines are functioning correctly.
4. Condensate Drains: All the condensate drains (CD) are working properly.
5. Knock Out Pot: The knock out pot remained dry the entire month.
6. Blower: The blower is functioning correctly.
7. Electric Controls: All electric controls are working properly.
8. Flare Assembly: The flare assembly is working correctly.

### Cap Maintenance

Landfill cap in good condition.

### Sanitary Leachate Collection System

The sanitary landfill dewatering system was operational all days during the month of May. The monthly summary for leachate levels are attached for your review.

A total of 41,500 gallons of sanitary leachate was shipped off site for disposal during the month of May. All 41,500 gallons were disposed at the Lower East Fork WWTP. All leachate wells are functioning. The leachate head levels remain below the approved alternate levels.

DK/dd  
Cy: File (H.6)



# LEACHATE HEAD LEVELS

May 2015

WELL	DATE: 5/4/15	DATE: 5/11/2014	DATE: 5/20/20/14	DATE: 5/27/14	DATE:
1	1.7	1.8	2.0	1.8	
2	1.2	1.2	1.2	1.2	
3	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned
4	1.9	1.8	1.9	1.9	
5	2.2	2.2	2.2	2.2	
6	1.6	1.6	1.6	1.6	
7	2.1	2.0	2.0	2.0	
8	1.0	1.9	1.8	1.9	
9	1.5	1.5	1.5	1.4	
10	1.7	1.5	1.3	1.3	
11	2.3	1.9	1.7	1.9	
12	1.1	1.1	1.1	1.1	
13	1.7	1.6	1.7	1.5	
14	1.7	1.5	1.3	1.4	
15	1.7	1.7	1.8	1.8	
16	1.5	1.8	2.0	2.0	
17	1.4	1.4	1.5	1.5	
18	1.9	1.8	1.8	1.8	
19	1.7	1.5	1.5	1.5	
20	1.1	1.3	1.5	7.0/1.6 A	
21	1.9	1.5	2.0	1.8	
22	1.6	1.5	1.8	1.5	
23	1.4	1.5	1.4	1.5	
24	1.4	1.4	1.4	1.4	
1B	1.6	1.5	1.5	1.5	
2B	1.8	1.7	1.7	1.7	

A - Reset Coyote

## Client Sample Results

Client: Republic Services Inc  
Project/Site: Aber Rd. Landfill - MP-290 analysis

TestAmerica Job ID: 480-74371-1

Client Sample ID: MP-290B

Lab Sample ID: 480-74371-1

Collection Date: 01/15/15 08:15

Sample Name:

Collection Date: 01/17/15 08:00

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	0.82	ug/L			01/29/15 11:50	1
1,1,2,2-Tetrachloroethane	ND		2.0	0.21	ug/L			01/29/15 11:50	1
1,1-Dichloroethane	ND		2.0	0.38	ug/L			01/29/15 11:50	1
1,1-Dichloroethene	ND		2.0	0.29	ug/L			01/29/15 11:50	1
1,2-Dichloroethane	ND		2.0	0.21	ug/L			01/29/15 11:50	1
2-Hexanone	ND		10	1.2	ug/L			01/29/15 11:50	1
Acetone	ND		10	3.0	ug/L			01/29/15 11:50	1
Benzene	ND		2.0	0.41	ug/L			01/29/15 11:50	1
Bromoform	ND		2.0	0.26	ug/L			01/29/15 11:50	1
Bromomethane	ND		2.0	0.89	ug/L			01/29/15 11:50	1
Carbon disulfide	ND		2.0	0.19	ug/L			01/29/15 11:50	1
Chlorobenzene	ND		2.0	0.75	ug/L			01/29/15 11:50	1
Dibromochloromethane	ND		2.0	0.32	ug/L			01/29/15 11:50	1
Chloroethane	12		2.0	0.32	ug/L			01/29/15 11:50	1
Chloromethane	ND		2.0	0.35	ug/L			01/29/15 11:50	1
cis-1,2-Dichloroethane	2.8		2.0	0.81	ug/L			01/29/15 11:50	1
cis-1,3-Dichloropropene	ND		2.0	0.36	ug/L			01/29/15 11:50	1
Bromodichloromethane	ND		2.0	0.39	ug/L			01/29/15 11:50	1
Dichlorodifluoromethane	ND		2.0	0.68	ug/L			01/29/15 11:50	1
2-Butanone (MEK)	ND		10	1.3	ug/L			01/29/15 11:50	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.1	ug/L			01/29/15 11:50	1
Methylene Chloride	ND		2.0	0.44	ug/L			01/29/15 11:50	1
Styrene	ND		2.0	0.73	ug/L			01/29/15 11:50	1
Tetrachloroethene	ND		2.0	0.36	ug/L			01/29/15 11:50	1
trans-1,2-Dichloroethene	ND		2.0	0.90	ug/L			01/29/15 11:50	1
trans-1,3-Dichloropropene	ND		2.0	0.37	ug/L			01/29/15 11:50	1
Trichloroethene	ND		2.0	0.46	ug/L			01/29/15 11:50	1
Trichlorofluoromethane	ND		2.0	0.88	ug/L			01/29/15 11:50	1
Vinyl chloride	ND		2.0	0.90	ug/L			01/29/15 11:50	1
Xylenes, Total	ND		2.0	0.66	ug/L			01/29/15 11:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		86 - 118		01/29/15 11:50	1
Toluene-d8 (Surr)	103		88 - 110		01/29/15 11:50	1
4-Bromofluorobenzene (Surr)	103		86 - 115		01/29/15 11:50	1

### Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.51				SU			01/15/15 08:15	1
Field Conductivity	1862				umhos/cm			01/15/15 08:15	1
Field Temperature	10.4				Degrees C			01/15/15 08:15	1
Field Turbidity	13.2				NTU			01/15/15 08:15	1

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## Client Sample Results

Client: Republic Services Inc  
Project/Site: Aber Rd. Landfill - MP-290 analysis

TestAmerica Job ID: 480-78093-1

Lab Sample ID: MP-290B  
Lab Sample ID: 480-78093-1  
Lab Sample ID: 480-78093-1

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### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	0.82	ug/L			04/16/15 10:50	1
1,1,2,2-Tetrachloroethane	ND		2.0	0.21	ug/L			04/16/15 10:50	1
1,1-Dichloroethane	ND		2.0	0.38	ug/L			04/16/15 10:50	1
1,1-Dichloroethene	ND		2.0	0.29	ug/L			04/16/15 10:50	1
1,2-Dichloroethane	ND		2.0	0.21	ug/L			04/16/15 10:50	1
2-Hexanone	ND		10	1.2	ug/L			04/16/15 10:50	1
Acetone	ND		10	3.0	ug/L			04/16/15 10:50	1
Benzene	ND		2.0	0.41	ug/L			04/16/15 10:50	1
Bromoform	ND		2.0	0.26	ug/L			04/16/15 10:50	1
Bromomethane	ND		2.0	0.69	ug/L			04/16/15 10:50	1
Carbon disulfide	ND		2.0	0.19	ug/L			04/16/15 10:50	1
Chlorobenzene	ND		2.0	0.75	ug/L			04/16/15 10:50	1
Dibromochloromethane	ND		2.0	0.32	ug/L			04/16/15 10:50	1
Chloroethane	12		2.0	0.32	ug/L			04/16/15 10:50	1
Chloromethane	ND		2.0	0.35	ug/L			04/16/15 10:50	1
cis-1,2-Dichloroethene	2.8		2.0	0.81	ug/L			04/16/15 10:50	1
cis-1,3-Dichloropropene	ND		2.0	0.36	ug/L			04/16/15 10:50	1
Bromodichloromethane	ND		2.0	0.39	ug/L			04/16/15 10:50	1
Dichlorodifluoromethane	ND		2.0	0.68	ug/L			04/16/15 10:50	1
2-Butanone (MEK)	ND		10	1.3	ug/L			04/16/15 10:50	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.1	ug/L			04/16/15 10:50	1
Methylene Chloride	ND		2.0	0.44	ug/L			04/16/15 10:50	1
Styrene	ND		2.0	0.73	ug/L			04/16/15 10:50	1
Tetrachloroethene	ND		2.0	0.36	ug/L			04/16/15 10:50	1
trans-1,2-Dichloroethene	ND		2.0	0.90	ug/L			04/16/15 10:50	1
trans-1,3-Dichloropropene	ND		2.0	0.37	ug/L			04/16/15 10:50	1
Trichloroethene	ND		2.0	0.46	ug/L			04/16/15 10:50	1
Trichlorofluoromethane	ND		2.0	0.88	ug/L			04/16/15 10:50	1
Vinyl chloride	1.1 J		2.0	0.90	ug/L			04/16/15 10:50	1
Xylenes, Total	ND		2.0	0.66	ug/L			04/16/15 10:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		86 - 118		04/16/15 10:50	1
Toluene-d8 (Surr)	98		88 - 110		04/16/15 10:50	1
4-Bromofluorobenzene (Surr)	100		86 - 115		04/16/15 10:50	1

### Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.99				SU			04/07/15 09:30	1
Field Conductivity	2621				umhos/cm			04/07/15 09:30	1
Field Temperature	9.5				Degrees C			04/07/15 09:30	1
Field Turbidity	5.49				NTU			04/07/15 09:30	1

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**EXHIBIT NO. 4**

## **EXHIBIT NO. 4**

### **LEVEL IV DATA VALIDATION SUMMARY REPORT**

#### **CMI MONITORING WELL SAMPLES**

**OCTOBER 2014**

#### **CECOS ABER ROAD FACILITY, WILLIAMSBURG, OHIO**

Level IV data validation has been completed for analytical data generated by TestAmerica Laboratories, Inc. (TestAmerica), for selected Corrective Measure Implementation (CMI) monitoring well samples and associated field quality control samples collected from the CECOS International facility during October 2014. Data validation was performed as required by the CECOS International Quality Assurance Project Plan (QAPjP). In accordance with the CMI monitoring requirements and QAPjP, all monitoring well samples collected in October 2014 both outside and inside of the slurry wall received Level IV data validation for COI list parameters. A summary of the total set of samples validated is presented in Table 1. A glossary of the data validation qualifiers is presented as Table 2. A summary of the individual data validation summary reports attached to this report is included in Table 3.

Data validation was performed for these samples in accordance with the U.S. Environmental Protection Agency (USEPA) National Functional Guidelines, the respective analytical method, and/or the Data Validation Standard Operating Procedures as presented in the approved QAPjP. The latest version of the QAPjP (Revision 5) was submitted to USEPA in February 2006.

All CMI monitoring locations were sampled for the COI parameter list in October 2014. Level IV data validation was performed for these locations for those parameters stated in the facility's QAPjP. A total of twenty monitoring wells and two underdrains were sampled in October 2014. In addition to the wells and underdrain samples, a total of ten associated quality control samples were submitted to the lab for the October 2014 monitoring event. The TestAmerica lab located in Amherst (Buffalo), New York analyzed the samples using the analytical methods specified in the QAPjP and provided the data validation packages for review.

The quality control samples analyzed for the October event included:

- Field blank samples (2)
- Performance evaluation samples (3)
- Matrix spike/matrix spike duplicate samples (2 each)
- Field duplicate samples (2)
- Trip blanks (1)

Field blanks, field duplicates, and MS/MSD were analyzed for the same parameters as their associated samples. The QAPjP states that one MS/MSD be collected for every 20 samples. Two MS/MSD samples were required since the total number of well/underdrain samples collected was 22. All field Quality Control (QC) samples collected and analyzed met the Quality Assurance (QA) objectives specified in the QAPjP.

### Limitations

Section 9, Data Reduction, Validation, and Reporting, within the QAPjP indicates that data reduction be conducted for field data and laboratory data; however, this report is limited to only the laboratory data. Additionally, the data quality assessment is limited to the review of off-site analytical laboratory data. This report addresses issues potentially impacting the usability of the laboratory data. If data validation findings were within acceptable criteria, limited discussion is presented. A discussion of data validation qualifiers (flags) applied to the data and reasons for the qualifiers are also presented.

Prepared by:  
SCS Engineers  
Project #05200007.02  
April 29, 2015

**TABLE 1**  
**SUMMARY OF CMI MONITORING WELL SAMPLES TO BE VALIDATED**

SAMPLE ID	OCTOBER 2014 <sup>1</sup>	JANUARY 2015
MP-207	COI/TCL	NS
MP-208	COI/TCL	NS
MP-238AR	COI/TCL	NS
MP-241AR	COI/TCL	NS
MP-249B	COI/TCL	NS
MP-275	COI/TCL	NS
MP-276	COI/TCL	NS
MP-299B	COI/TCL	NS
MP-303B	COI/TCL	NS
MP-304	COI/TCL	NS
MP-304A	COI/TCL	NS
MP-305	COI/TCL	NS
MP-305A	COI/TCL	NS
MP-306A	COI/TCL	NS
MP-202	COI/TCL	NS
MP-219A	COI/TCL	NS
MP-222B	COI/TCL	NS
MP-224B	COI/TCL	NS
MP-246	COI/TCL	NS
MP-248B	COI/TCL	NS
U-11	COI/TCL	NS
U-12	COI/TCL	NS

NS = Not Sampled for CMI

COI/TCL = Contaminants of Interest/Target Compound List

APPENDIX IX = 40 CFR 264 Appendix IX List of Compounds

NOTES:

1. October 2014 COI samples validated for VOC only.

**TABLE 2**

**GLOSSARY OF DATA VALIDATION QUALIFIERS**

U	The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL.
R	The reported result has been qualified as unusable due to gross violations of one or more quality control criteria. This flag does not address the presence or absence of the analyte of concern rather it addresses one or more major QC problems associated with the reported result. If the analyte qualified is critical to the project, resampling and reanalysis of the qualified result may be required.
UJ	The analyte was considered estimated non-detect. The associated numerical detection limit has been qualified as estimated due to a QA/QC anomaly and should be considered estimated.
10U	The analyte was determined to be non-detect due to its presence in the field and/or laboratory blank associated with the sample. The reported result has been qualified as not detected due to the blank contamination. The numerical value listed in front of U is the lab's Project Reporting Limit (PRL) for the analyte and will change according to the reported PRL for that analyte.
D	The result was determined in a diluted sample.
J	The analyte was analyzed for and was positively identified but the associated numerical value may be imprecise due to a quality control anomaly. The data is considered usable for many purposes. The 'J' flag is also used to indicate results above the method detection limit (MDL) but below the reporting limit. These results should be considered estimated.
B	The analyte was analyzed for and positively identified. The reported result should be considered estimated due to negative contamination in the associated laboratory blank.
E	Identifies compounds whose concentrations exceed the calibration range of the instruments for specific analysis.
N	The analysis indicates that an analyte is present, and there are strong indications that the identity is correct.
NJ	The analysis indicates that the analyte is "tentatively identified" and the associated numerical is estimated. The quantification is a result of multiple QA/QC failures not sufficient enough to reject the result.



TABLE 3

## SUMMARY OF DATA VALIDATION REPORT ATTACHMENTS

[illegible]

ATTACHMENT 4-1  
LEVEL IV DATA VALIDATION SUMMARY REPORT  
CECOS INTERNATIONAL VOC ANALYSIS  
OCTOBER 2014 SAMPLING EVENT

## I. INTRODUCTION

This data package included a total of twenty monitoring well samples, two underdrain samples, four associated field quality control samples, three performance evaluation samples, two matrix spike/matrix spike duplicate pairs (MS/MSD), and one trip blank. TestAmerica of Amherst, NY analyzed the samples using the 8260B analytical method specified in the QAPjP for the CECOS Target Analyte and Compounds of Interest list in Table 1-1A of the QAPjP.

## VALIDATION SUMMARY

### II. Data Deliverables

The data package contained all deliverables and was generally acceptable for use.

### III. Technical Holding Times

All samples were analyzed within the acceptable holding time of 14 days for preserved and cooled samples. The coolers were received at temperatures below 4 degrees C.

### IV. Instrument Performance Check

An instrument performance check was performed at the beginning of each analytical sequence using bromofluorobenzene (BFB). No transcription or calculation errors were noted. All performance checks met the criteria stated in the QAPjP.

### V. Initial Calibration (ICAL)

ICALs were performed at an appropriate frequency and were performed within 12 hours of the instrument performance check. The following variances from the QAPjP were noted for the ICALs in the data package:

- The concentrations of the calibration standards differed from those stated in the QAPjP. However, the CRQL was bracketed for all target analytes.
- Table 1 of the QAPjP lists pentafluorobenzene as one of the internal standards for target compounds; however, the lab utilized 1,4-dichlorobenzene-D4 as an internal standard instead of pentafluorobenzene.

- When calculating Relative Response Factors (RRFs), some target compounds were assigned to different internal standards than those assigned in Table 1 in the QAPjP.
- The laboratory considers the maximum percent Relative Standard Deviation (RSD) for some compounds to be 15% rather than the 30% limit included in the QAPjP.

The initial calibration results for 1,4-dioxene did not meet the minimum RRF criteria of >0.05, but this is not a compound of interest.

#### VI. Continuing Calibration (CCAL)

All of the compounds in the five CCALs met the Percent Difference (% D) criteria stated in the QAPjP, with the following exceptions.

- HP5973P CCVIS 480-209135/8, hexane %D = -20.3%

Because the above is not a compound of interest, no results have been qualified.

#### VII. Blanks

Sufficient laboratory, field, and equipment blanks were included in the data packages to meet the requirements of the QAPjP. All samples were run within 12 hours of a method blank. No compounds of interest were reported in the method blanks. No compounds of interest were reported in the other types of blanks, except for estimated concentrations of methylene chloride in the Trip Blank (lab sample number 480-69455-17), Field Blank#1 (lab sample number 480-69455-15), and Field Blank#2 (lab sample number 480-69455-15-16). Methylene chloride was not detected in any of the well or underdrain samples.

#### VIII. System Monitoring Compounds

TestAmerica utilized 1, 2-dichloroethane-d4 and 4-bromofluorobenze as two of the three surrogates compared to dibromofluoromethane and bromofluorobenzene as listed in the QAPjP. Percent recoveries for the surrogates fell within the ranges presented in the QAPjP.

#### IX. Matrix Spike/Matrix Spike Duplicates (MS/MSD) and Laboratory Control Samples (LCS)

The data package contained three LCS and two MS/MSD sample pairs. The QAPjP includes the evaluation of Percent Recovery (%R) and Relative Percent Difference (RPD) for five compounds for the MS/MSD and LCS samples. The lab evaluated four of the five compounds in the Form III summary for each sample. All %R and RPD values were within the laboratory specific limits required by the QAPjP. No compounds of interest were detected in the original samples associated with the MS/MSD samples. Therefore, no comparison of the recovery for non-spiked compounds was possible.

#### X. Internal Standards (IS)

All IS area counts and retention times were within the limits stated in the QAPjP. No transcription errors were noted.

#### XI. Target Compound Identification

All compounds detected appeared to meet the criteria stated in the QAPjP.

#### XII. Compound Quantitation and Reported CRQLs

All criteria stated in the QAPjP were met. No errors were encountered in the recalculation checks performed on ten percent of the detections.

All analyte reporting limits were equal to or less than the Contract Required Quantitation Limit concentrations, except where dilutions resulted in higher reporting limits.

One analyte in MP-222B exceeded the Cleanup Standard, four exceeded the Cleanup Standard in MP-246, and one exceeded the Cleanup Standard in U-12 (Table 4-2).

#### XIII. Tentatively Identified Compounds

Tentatively identified compounds were not required to be evaluated for this sampling event.

#### XIV. Field Duplicates

The data package included two duplicates; DUPLICATE-CMI #1 of MP-276 and DUPLICATE-CMI #2 CMI of MP-275. No compounds were detected in either the original or duplicate samples.

#### XV. Overall Assessment of Data

The percent completeness of data equals 100 %. No deficiencies that warranted qualification were found. No qualified samples are presented on Table 4-1. None of data results were rejected due to quality control deficiencies.

A summary of the detected VOCs is presented as Table 4-2.

**TABLE 4-1  
QUALIFIED SAMPLES  
OCTOBER 2014**

Sample Name	Lab Sample ID	
None		

**TABLE 4-2  
SUMMARY OF VOC DETECTIONS  
OCTOBER 2014**

CECOS Sample ID	Lab Sample ID	Analyte	Result (ug/L)	Lab Flag	SCS Flag
MP-219A	480-69455-3	Vinyl Chloride <sup>2</sup>	1.2	J	J
MP-246	480-69455-9 <sup>4</sup>	1,1,1-Trichloroethane	55		
		1,1-Dichloroethane	100		
		1,1-Dichloroethene <sup>1</sup>	<b>17</b>		
		1,2-Dichloroethane <sup>3</sup>	<b>22</b>		
		Benzene	1.6	J	J
		Chloroethane	4.2		
		cis-1,2-Dichloroethene	13		
		Tetrachloroethylene <sup>3</sup>	<b>78</b>		
		Trichloroethylene <sup>3</sup>	<b>9.7</b>		
		Trichlorofluoromethane	4.0		
		Vinyl Chloride <sup>2</sup>	2.4	J	J
MP-222B	480-69455-10 <sup>5</sup>	1,1-Dichloroethane	1.2	J	J
		1,2-Dichloroethane <sup>3</sup>	<b>91</b>		
		Benzene	<b>3.1</b>		
		Chloroethane	1.4	J	J
		cis-1,2-Dichloroethene	1.4	J	J
		Dichlorodifluoromethane	7.1		
MP-202	480-69455-12	1,1-Dichloroethane	6.6		
		1,2-Dichloroethane	2.7		
		Benzene	0.54	J	J
		cis-1,2-Dichloroethene	1.1	J	J
		Dichlorodifluoromethane	3.3		
		Trichloroethene	0.47	J	J
MP-248B	480-69455-13	Acetone	13		
Field Blank #1	480-69455-15	Methylene Chloride	1.1	J	J
Field Blank #2	480-69455-16	Methylene Chloride	1.1	J	J
Trip Blank	480-69455-17	Methylene Chloride	0.54	J	J
U-11	480-69455-18	1,1-Dichloroethane	1.0	J	J
		cis-1,2-Dichloroethene	1.1	J	J
U-12	480-69455-19	1,1-Dichloroethane	1.3	J	J
		2-Butanone (MEK)	3.5	J	J
		cis-1,2-Dichloroethene	8.3		
		Vinyl Chloride <sup>2</sup>	<b>2.5</b>		
MP-224B	480-69455-29	1,1-Dichloroethane	4.4		
		1,2-Dichloroethane	0.33	J	J

**NOTES:**

**Bold** - Confirmed result exceeds Action Level concentration.

**☐☐☐☐☐** - Confirmed result exceeds Cleanup Standard concentration.

1. COI Compound, Cleanup Standard = 7 ug/L (1,1-DCE)

2. COI Compound, Cleanup Standard = 2 ug/L (Vinyl Chloride)

3. COI Compound, Cleanup Standard = 5 ug/L (Tetrachloroethylene)

4. The analysis for MP-246 was run at a dilution factor of 2 for all COI compounds.

5. The analysis for MP-222B was rerun at a dilution factor of 2 to better quantify 1,2-DCA. Other results are based on no dilution.

**EXHIBIT NO. 5**

**EAGON & ASSOCIATES, INC.**

***Consulting Geologists***

100 Old Wilson Bridge Road, Suite 115 / Worthington, Ohio 43085 / (614) 888-5760 / FAX (614) 888-5763

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May 28, 2015

Mr. Daniel Deborde  
CECOS International, Inc.  
5092 Aber Road  
Williamsburg, Ohio 45176

**RE: Administrative Order on Consent, O&M Progress Report No. 38  
Exhibit 5 - Corrective Measures Implementation Performance Monitoring Evaluation  
CECOS International, Inc. - Aber Road Facility  
Docket No. V-W-024-94  
EPA ID. No. OHD 087 433 744**

Dear Mr. Deborde:

Transmitted herewith is the Corrective Measures Implementation (CMI) Performance Monitoring Evaluation for CMI data collected during the April 2015 monitoring event at the closed Aber Road Facility. This evaluation is being provided to you for inclusion as Exhibit 5 of the Operation and Maintenance (O&M) Progress Report No. 38 that must be submitted to the United States Environmental Protection Agency (U.S. EPA) by June 10, 2015.

**APRIL 2015 MONITORING RESULTS**

**Compounds of Interest/Target Compound List Volatile Organic Compound Results – Outside Slurry Wall Monitoring Wells**

The April 2015 monitoring event was conducted in accordance with Section 5 of the July 2009 CMI O&M Manual. The event represented year seven, quarter two of CMI monitoring as listed on Table 5.2 (Post Shutdown Monitoring Program/Groundwater Monitoring) of the CMI O&M Manual. Monitoring wells located outside the slurry wall were sampled for Compounds of Interest/Target Compound List (COI/TCL) volatile organic compounds (VOCs). Monitoring locations located outside the slurry wall are sampled semiannually (spring and fall). Locations inside the slurry wall are sampled annually (fall).

For the April 2015 event, no COI VOCs were detected at or above their respective method detection limits (MDLs) in the monitoring locations outside the slurry wall. A summary of the COI VOC results is presented on attached Table 1. Groundwater Cleanup Standards (GWCS) shown on Table 1 and listed in Section 5.2 of the July 2009 CMI O&M Manual continue to be achieved for the COIs at the 14 CMI wells located outside the slurry wall.



### **Semiannual Gradient Analysis and Elevation Differences for Nested Wells/Piezometers**

Section 5.6 of the July 2009 CMI O&M Manual requires semiannual ground-water elevation measurements to be collected for a minimum of five years at six well clusters inside and outside the slurry wall to assist in identifying hydraulic gradients across the slurry wall following shutdown of the gradient control pumping system in 2009. The initial five-year gradient monitoring period was completed as of the October 2013 event. As a result, in the future CECOS may request U.S. EPA approval to reduce the measurement of ground-water elevations to an annual basis for gradient analysis.

Ground-water elevation measurements were collected for the CMI gradient analysis well network on April 6, 2015, prior to initiating the CMI ground-water sampling event. Figure 1 shows the locations of the six nested piezometers/wells. As required in Section 5.7.2 of the CMI O&M Manual, gradient evaluations for the six nested piezometers/wells are presented in Exhibit 2 and time-series plots depicting elevation differences for each nested piezometer are presented herein as Figures 2 through 7.

During the April 2015 event, well pair #3 (880PZ-2 and MP-305A) indicated an inward gradient. Well pairs #1 (USPZ-1 and MP-303B), #2 (880PZ-1 and MP-208), #4 (880PZ-3 and MP-238AR), #5 (880PZ-4 and MP-304A), and #6 (880PZ-5 and MP-241AR) indicated outward gradients. Outward gradients have been observed at these well pairs during past events and conditions observed during the event were within the range of historic observations (See Figures 2 through 7). As discussed in the June 30, 2008 "Aber Road Petition to Cease Groundwater Recovery", advective ground-water flow through the slurry wall is negligible due to the low hydraulic conductivity of the bentonite and the fact that the Upper Sand and 880 horizons were removed during slurry wall construction; therefore, the presence of an outward gradient is not expected to result in contaminant transport across the slurry wall. Semiannual monitoring of wells outside the slurry wall continues to demonstrate that COI/TCL VOCs are not being transported across the slurry wall's hydraulic barrier.

### **Semiannual Potentiometric Surface Maps**

Section 5.6 of the July 2009 CMI O&M Manual requires monitoring wells listed in Section 5.4 of the Manual to be used in developing semiannual groundwater elevation maps both inside and outside the slurry wall. This is as specified in Condition #1 of the March 31, 2009 U.S. EPA "Final Approval with Conditions/Modifications to Shutdown the Groundwater Gradient Control System."

Potentiometric surface maps for CMI wells screened in the Upper Sand, 880 Sand, and Bedrock Till Interface (BTI) Zones in April 2015 are shown on Figures 8, 9 and 10, respectively. Ground-water flow conditions in the Upper Sand and 880 Sand Zones are similar in nature to historical conditions. The removal of formation material during cell construction and installation of the slurry wall as a hydraulic barrier resulted in localized isolation of the remaining sands. Therefore, water levels in the Upper Sand and 880 Sand in the CMI area generally do not define well organized potentiometric surfaces. Ground-water flow in the BTI, which is below the depth of the slurry wall,

was toward the southwest in the vicinity of the CMI area during the event, consistent with previous observations.

#### **Supplemental Sampling of MP-246**

As indicated in the prior semiannual report, Monitoring well MP-246 located inside the slurry wall was sampled for COI/TCL VOCs in April 2015 as a supplemental event following a Screening Level exceedance for 1,2-Dichloroethane during the October 2014 sampling event. The Screening Level of 15 ug/L was exceeded by an October 2014 concentration of 22 ug/L. The April 2015 1,2-Dichloroethane result of 6.2 ug/L was below the Screening Level and did not confirm the October 2014 result. In addition to the result for 1,2-Dichloroethane and because MP-246 is located inside the slurry wall, all of its April 2015 COI/TCL VOC results have been compared to concentration-based performance standards (CBPSs) and Screening Levels and the results are discussed below.

#### **COMPARISON OF MP-246 SUPPLEMENTAL SAMPLING RESULTS TO CBPSs & SCREENING LEVELS**

The June 30, 2008 *Aber Road Petition to Cease Groundwater Recovery* submittal noted six COI/TCL VOCs at wells inside the slurry wall with concentrations above the Consent Order-specified GWCSs intended to be applied at the point of compliance wells located outside the slurry wall. These compounds are 1,2-Dichloroethane, 1,1-Dichloroethylene, Tetrachloroethylene, 1,1,1-Trichloroethane, Trichloroethylene, and Vinyl Chloride. The June 30, 2008 submittal contained CBPSs for these six parameters calculated using conservative fate-and-transport assumptions such that if concentrations of these parameters at wells inside the slurry wall were below the CBPSs, then concentrations of these parameters in wells outside the slurry wall would remain below GWCSs for 30 years after System shutdown. The May 30, 2008 *Aber Road Petition to Cease Groundwater Recovery* (including an August 14, 2008 supplement) also developed Screening Levels (below the CBPSs) for the six COI/TCL VOCs for wells MP-219A, MP-246, and MP-248B, which are located inside the slurry wall boundary. The Screening Levels were calculated using conservative fate-and-transport assumptions such that if concentrations of these parameters at wells inside the slurry wall were below the Screening Levels, then concentrations of these parameters in wells outside the slurry wall would be expected to remain below detection for 30 years after system shutdown. The CBPSs and Screening Levels for 1,2-Dichloroethane, 1,1-Dichloroethylene, Tetrachloroethylene, 1,1,1-Trichloroethane, Trichloroethylene, and Vinyl Chloride are presented in Section 5.8 of the July 2009 CMI O&M Manual.

Attached Table 2 contains a comparison of the April 2015 supplemental results from monitoring well MP-246 (located inside the slurry wall) to the CBPSs and Screening Levels calculated for 1,2-Dichloroethane, 1,1-Dichloroethylene, Tetrachloroethylene, 1,1,1-Trichloroethane, Trichloroethylene, and Vinyl Chloride, where detected. None of the April 2015 COI/TCL VOC results for MP-246 exceeded their respective CBPSs or Screening Levels. As noted above, the October 2014 1,2-Dichloroethane concentration of 22 ug/L was not confirmed by the April 2015 result of 6.2 ug/L, which was well below the Screening Level of 15 ug/L. Therefore, no further action is warranted at this time. The next regularly scheduled sampling event for CMI monitoring wells located inside the slurry wall is scheduled for fall 2015.

Mr. Daniel Deborde  
May 28, 2015  
Page 4

Please contact me at (614) 888-5760 if you have any questions.

Sincerely,

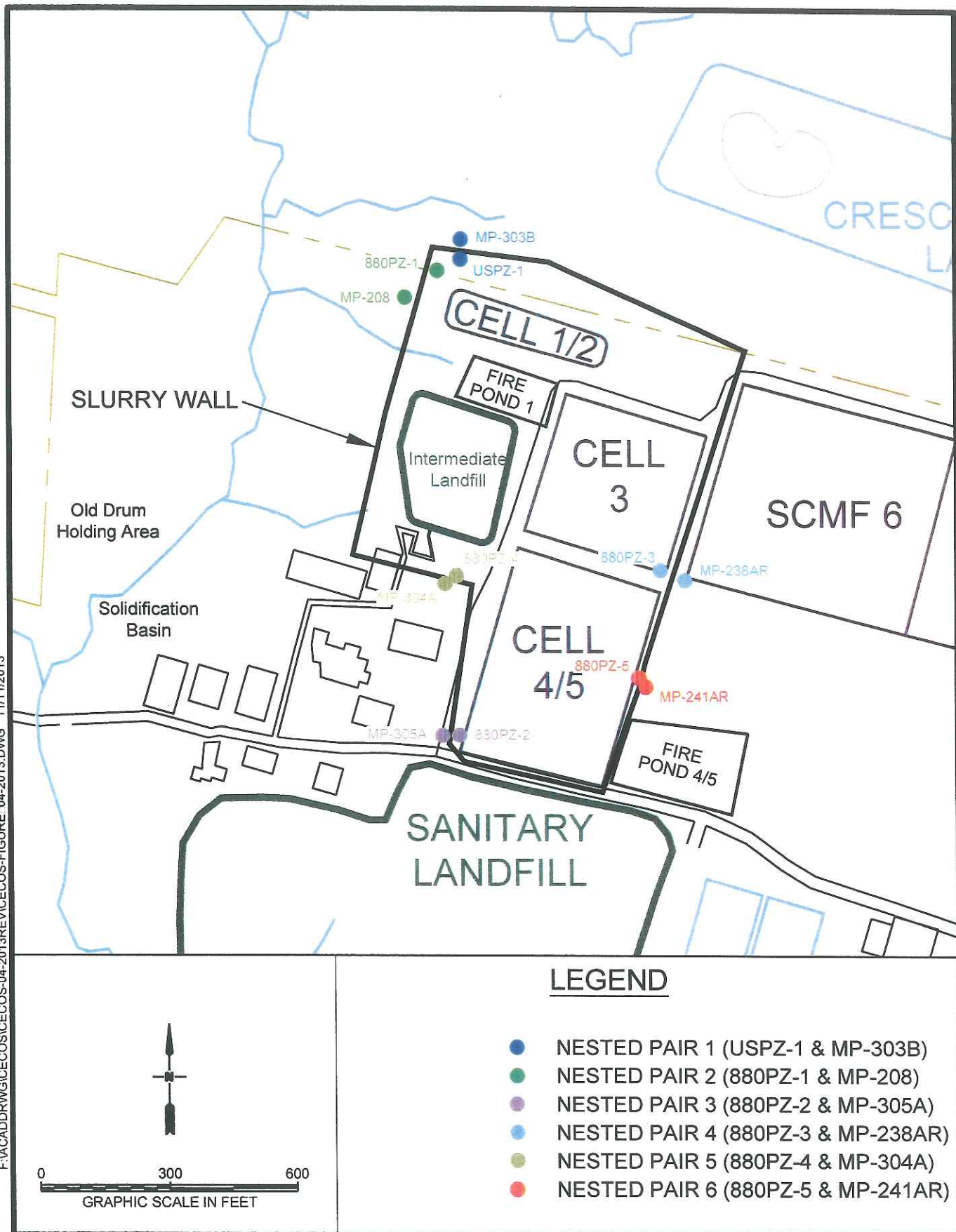
A handwritten signature in black ink, appearing to read "Michael T. Gibson", with a stylized flourish at the end.

Michael T. Gibson, CPG  
Hydrogeologist

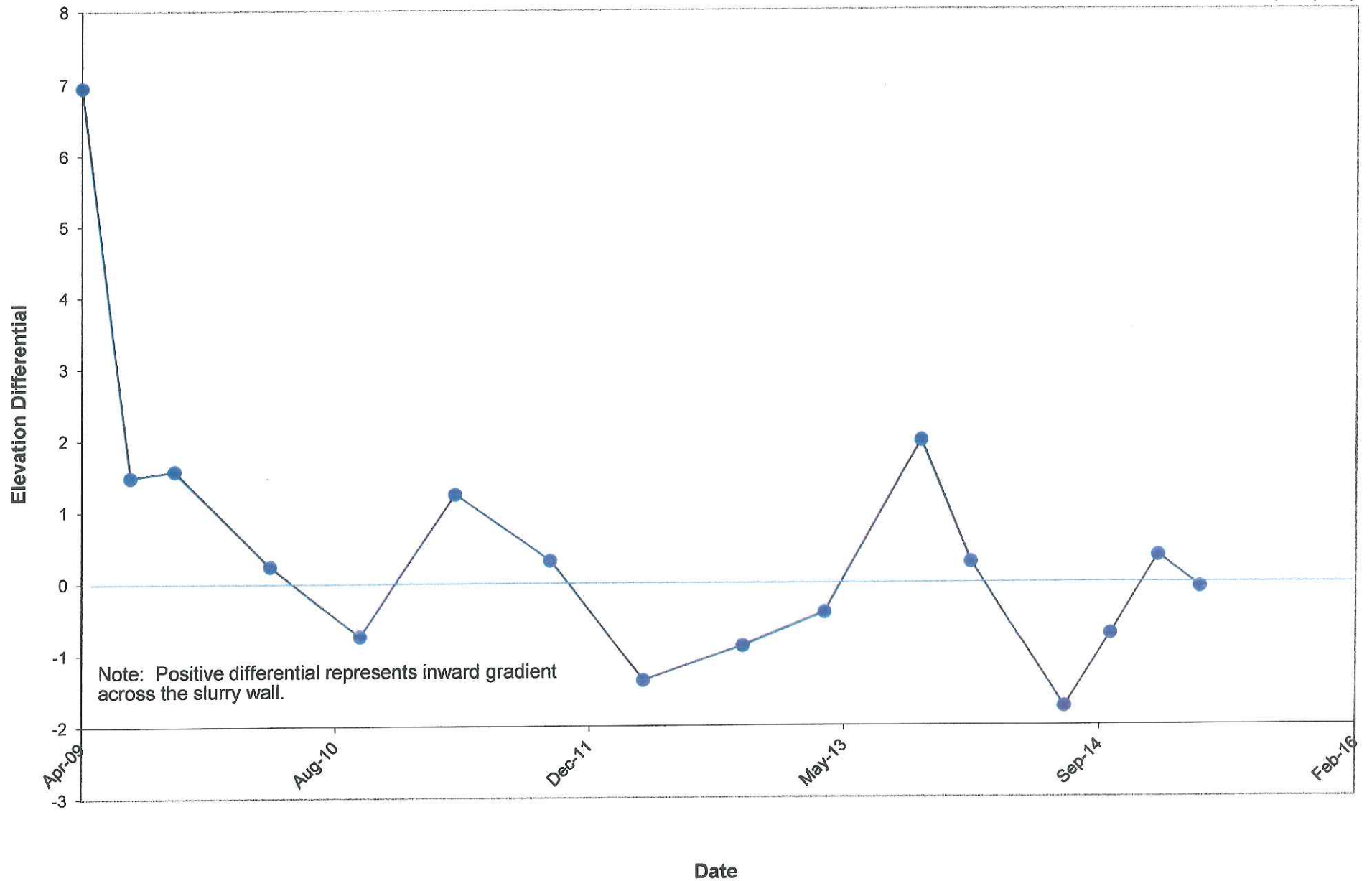
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## FIGURES

F:\ACAD\DRWG\CECOS\CECOS-04-2013\REV\CECOS-FIGURE 04-2013.DWG 11/1/2013

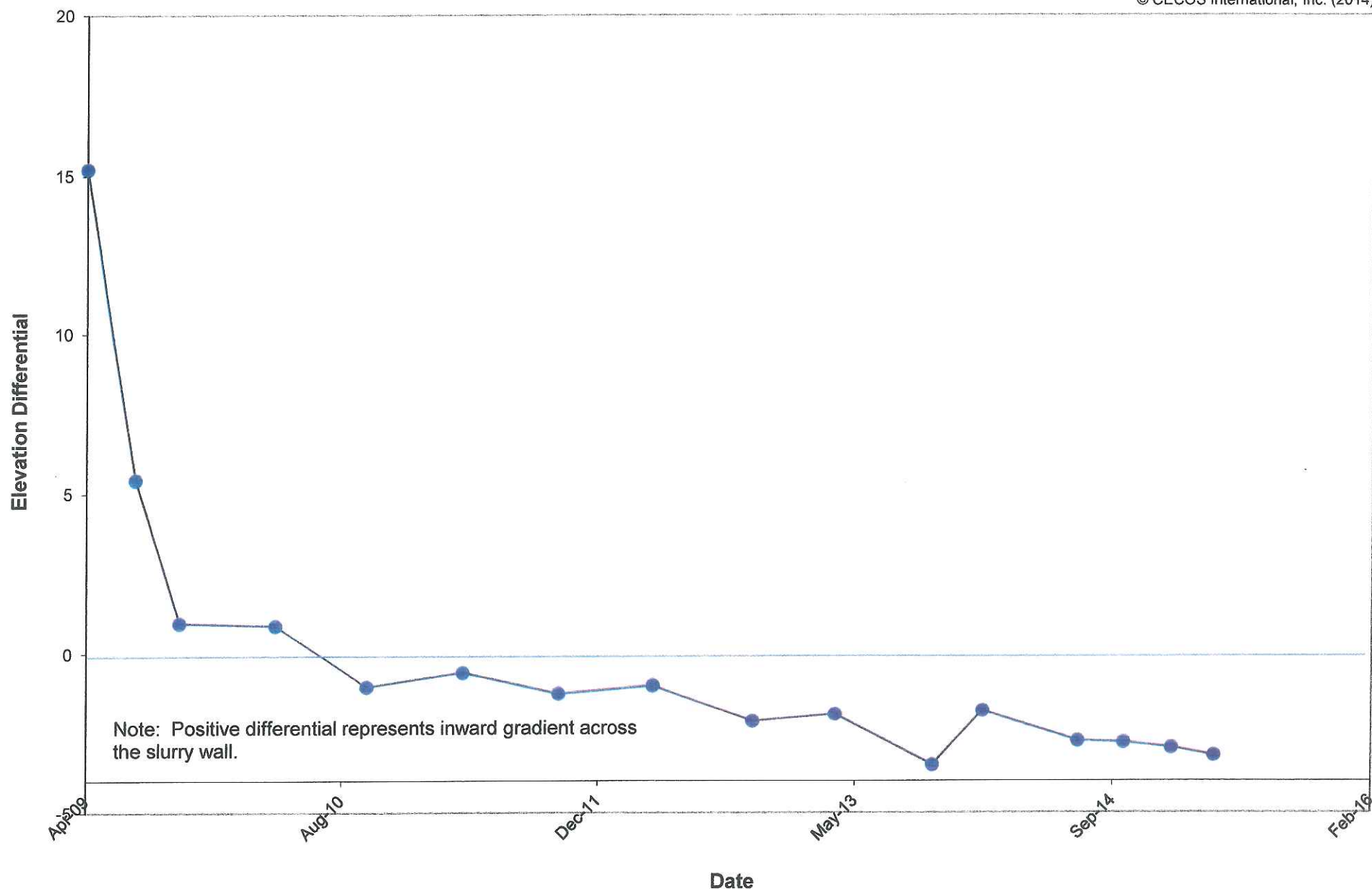


Aber Road Facility, Williamsburg, Ohio  
FIGURE 1. NESTED MONITORING WELL / PIEZOMETER LOCATIONS



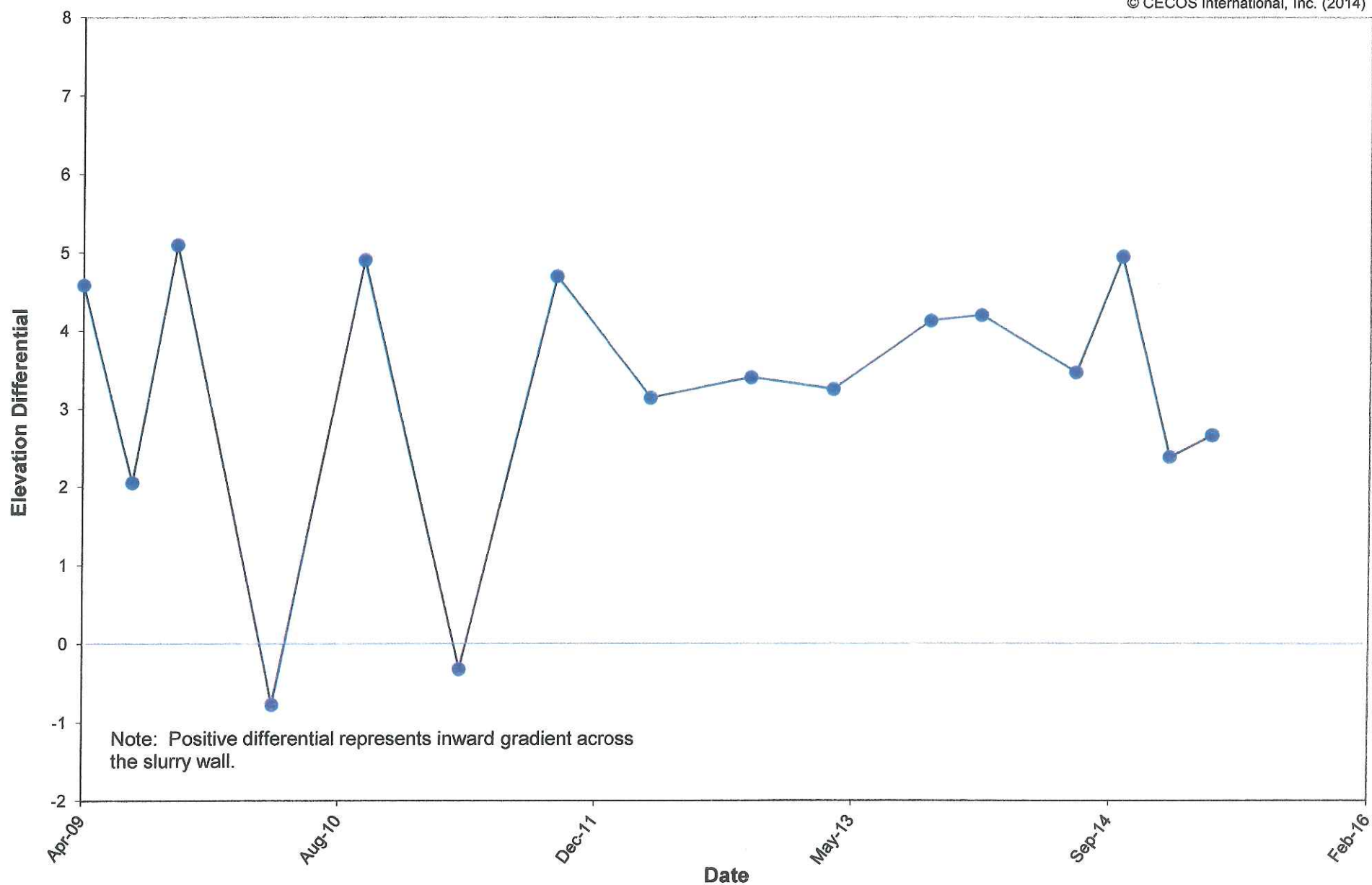
Aber Road Facility  
Williamsburg, Ohio

**Figure 2**  
Elevation Differential for  
Well Pair 1: MP-303B & USPZ-1



Aber Road Facility  
Williamsburg, Ohio

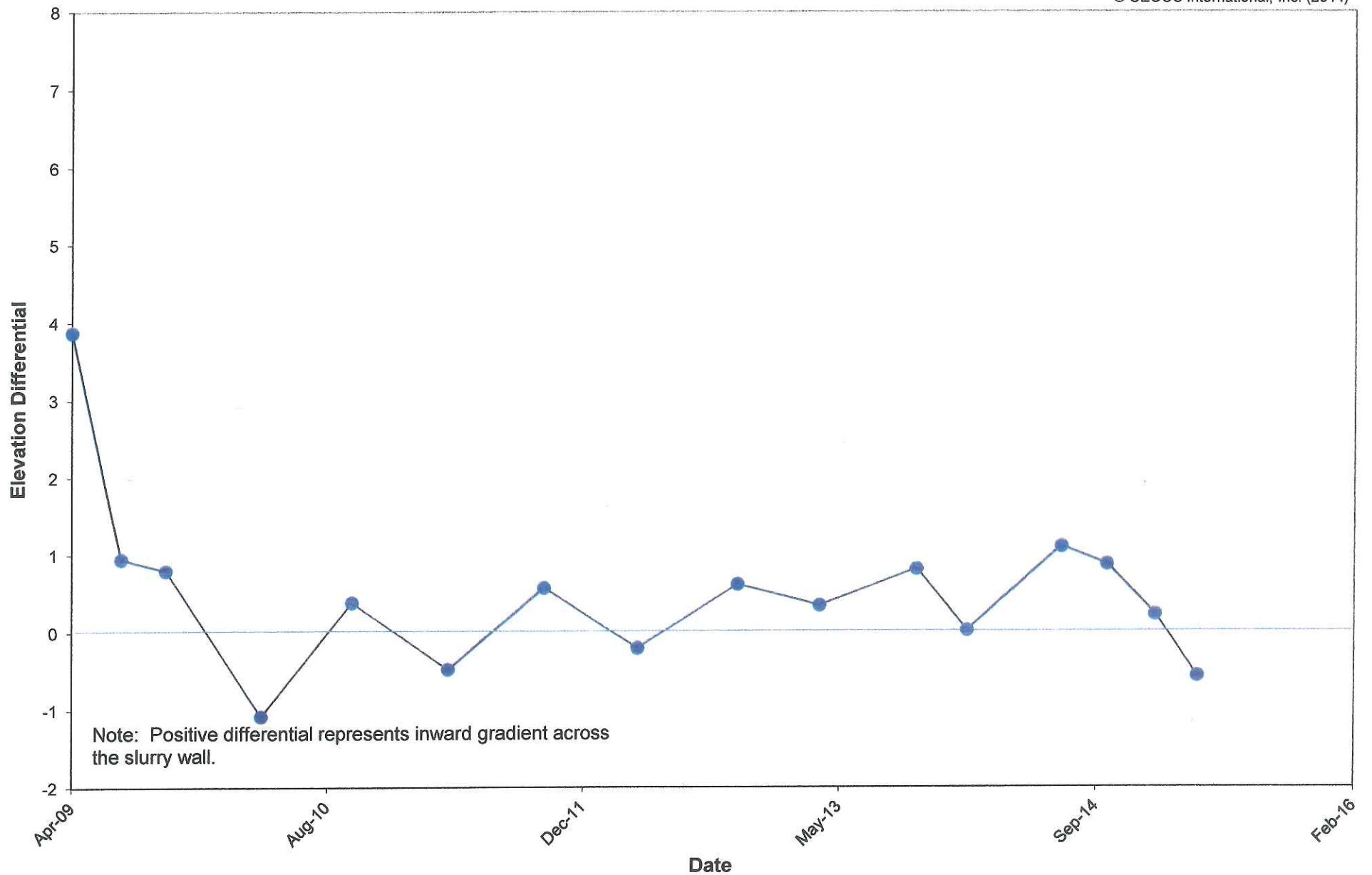
**Figure 3**  
Elevation Differential for  
Well Pair 2: MP-208 & 880PZ-1



Aber Road Facility  
Williamsburg, Ohio

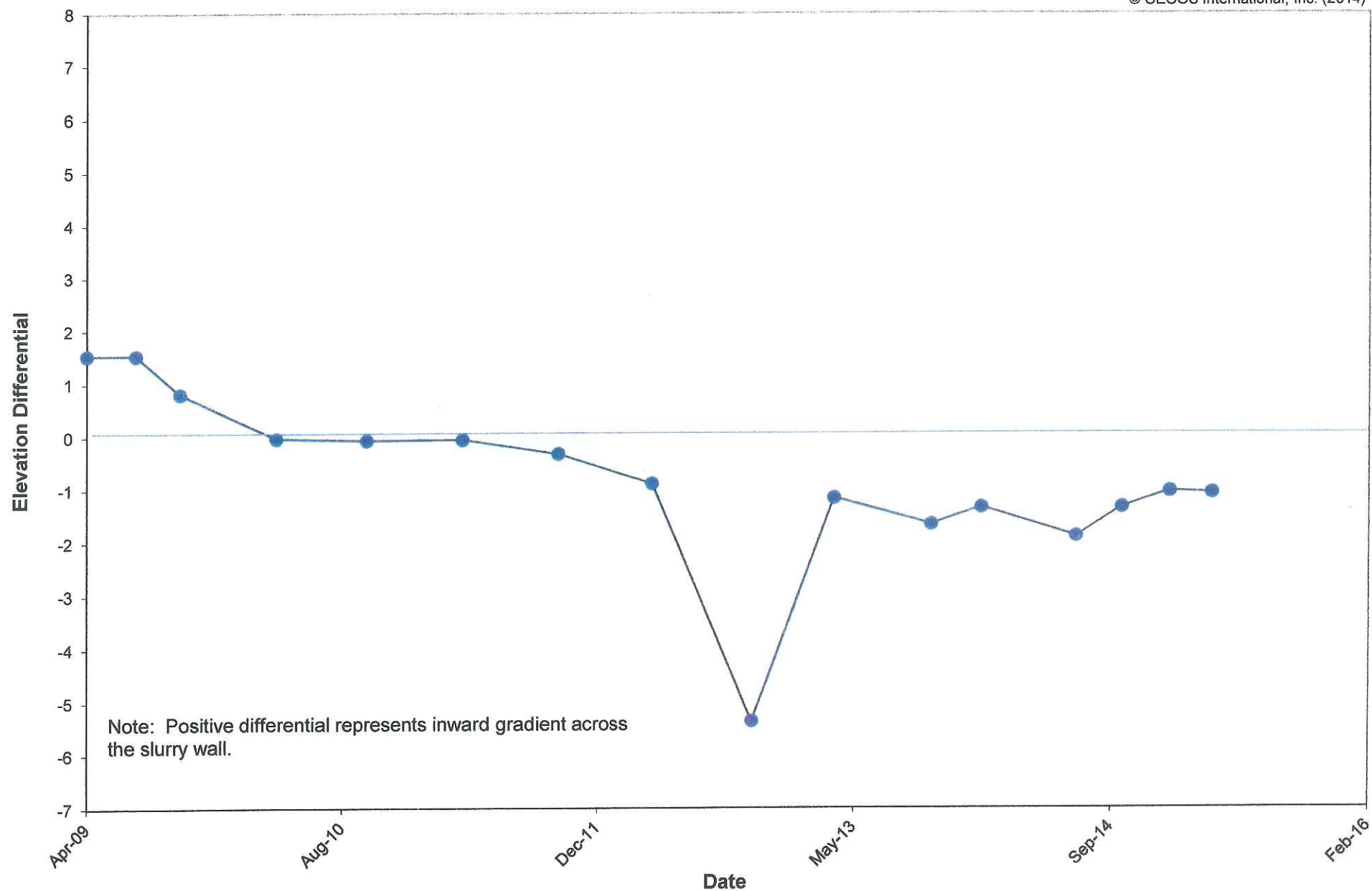
**Figure 4**  
Elevation Differential for  
Well Pair 3: MP-305A & 880PZ-2





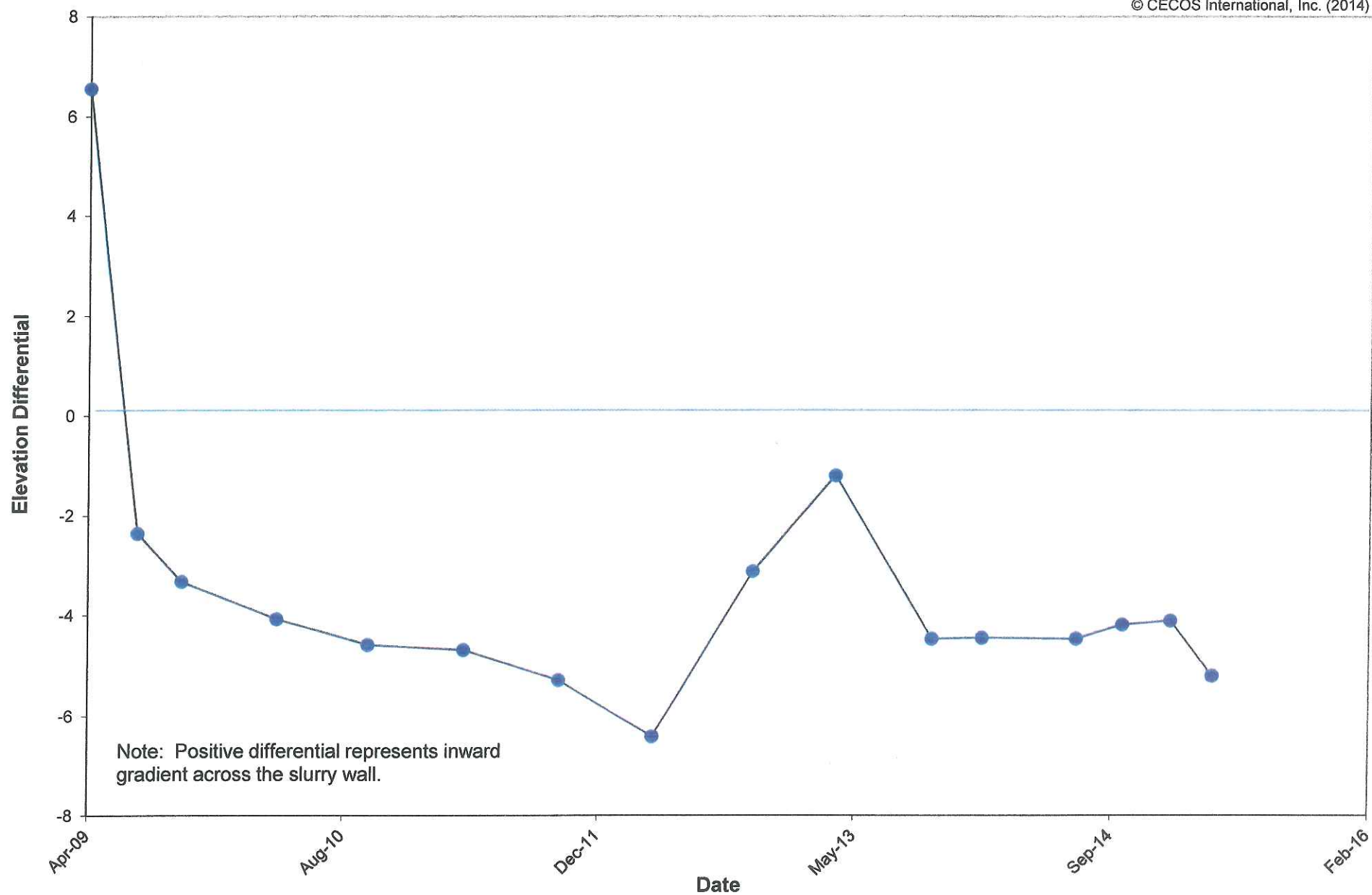
Aber Road Facility  
Williamsburg, Ohio

**Figure 5**  
Elevation Differential for  
Well Pair 4: MP-238AR & 880PZ-3



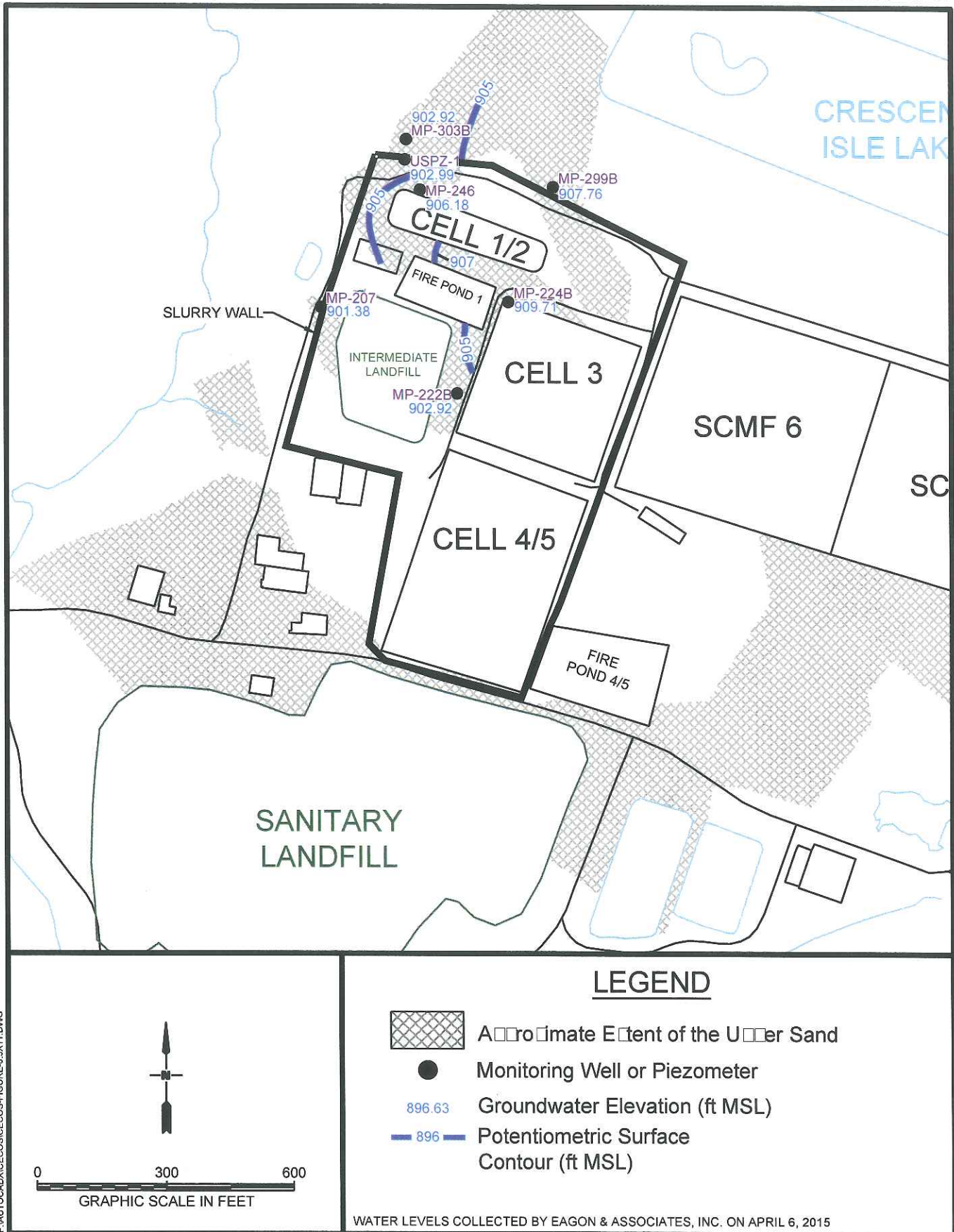
Aber Road Facility  
Williamsburg, Ohio

**Figure 6**  
Elevation Differential for  
Well Pair 5: MP-304A & 880PZ-4



Aber Road Facility  
Williamsburg, Ohio

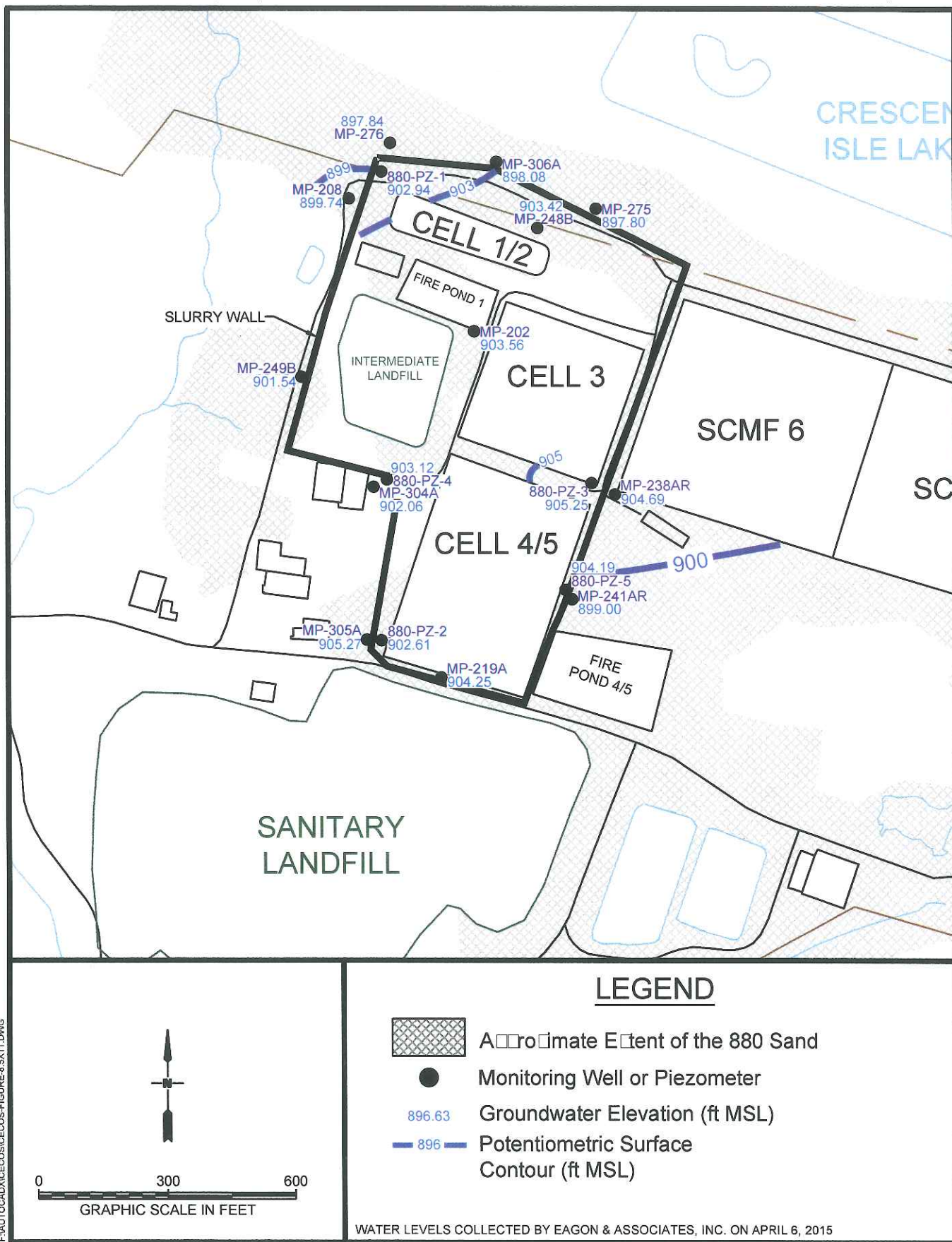
**Figure 7**  
Elevation Differential for  
Well Pair 6: MP-241AR & 880PZ-5



Aber Road Facility, Williamsburg, Ohio

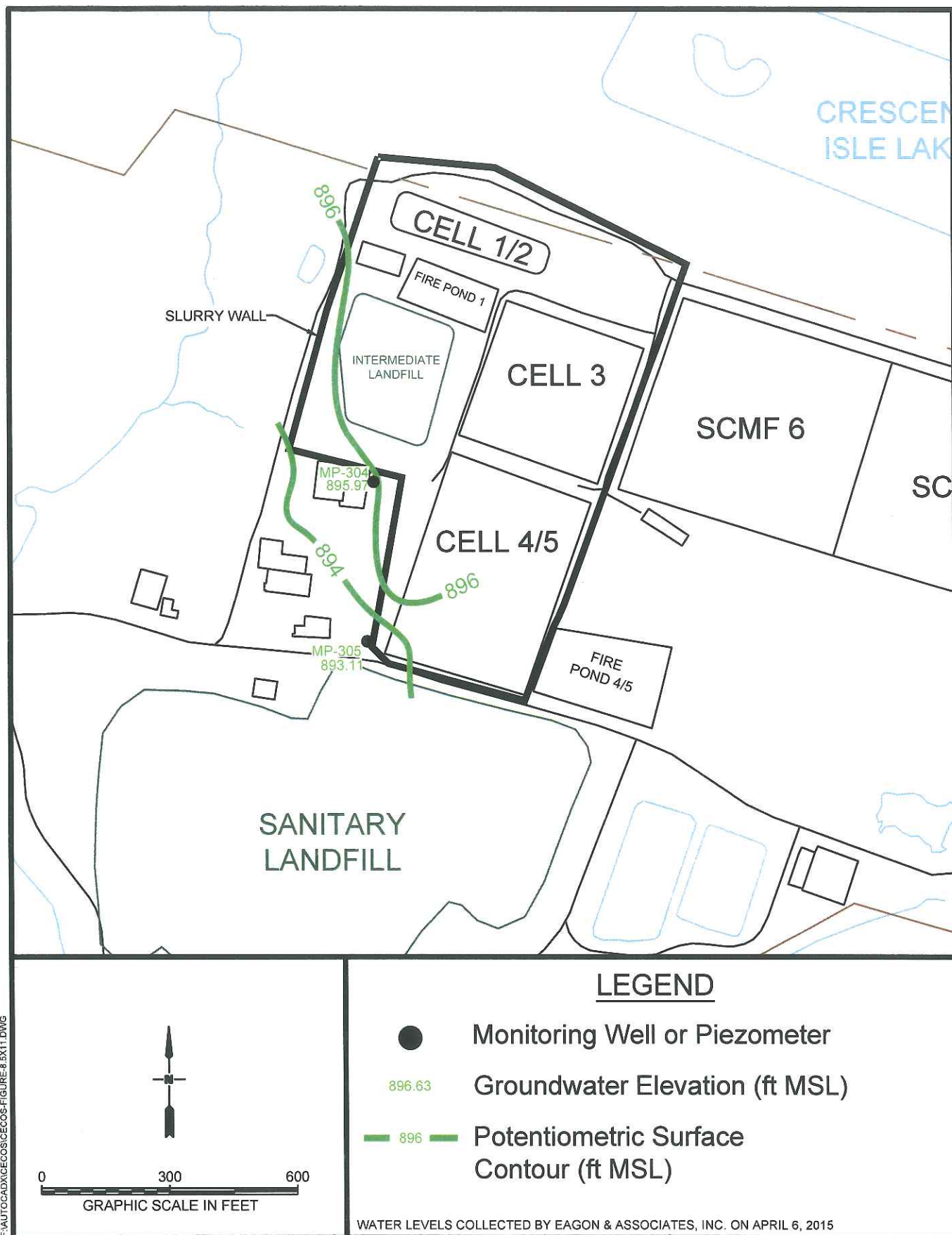
FIGURE 8. POTENTIOMETRIC SURFACE OF THE UPPER SAND ZONE - CMI WELLS, APRIL 6, 2015





Aber Road Facility, Williamsburg, Ohio

FIGURE 9. POTENTIOMETRIC SURFACE OF THE 880 SAND ZONE - CMI WELLS, APRIL 6, 2015



Aber Road Facility, Williamsburg, Ohio

FIGURE 10. POTENTIOMETRIC SURFACE OF THE BEDROCK TILL INTERFACE - CMI WELLS, APRIL 6, 2015

## TABLES



**TABLE 1.**  
**SUMMARY OF APRIL 2015 CONSTITUENT OF INTEREST (COI) RESULTS AND COMPARISON TO CLEANUP STANDARDS AND ACTION LEVELS<sup>1</sup>**  
**CECOS INTERNATIONAL, INC. - ABER ROAD FACILITY**

Well	Sampling Date	Acetone (ug/L)	Benzene (ug/L)	Methyl ethyl ketone (ug/L)	Chloro- ethane (ug/L)	Dichloro- difluoro- methane (ug/L)	1,1-Dichloro- ethane (ug/L)	1,2-Dichloro- ethane (ug/L)	1,1- Dichloro- ethylene (ug/L)	cis-1,2- Dichloro- ethylene (ug/L)	trans-1,2- Dichloro- ethylene (ug/L)	Methylene chloride (ug/L)	Tetra- chloro- ethylene (ug/L)	1,1,1- Trichloro- ethane (ug/L)	Trichloro- ethylene (ug/L)	Trichloro- fluoro- methane (ug/L)	Vinyl chloride (ug/L)
Cleanup Standard (ug/L) <sup>1</sup>		10000	5	61000	292000	20000	10000	5	7	70	100	5	5	200	5	31000	2
Basis		Health	MCL	Health	Health	Health	Health	MCL	MCL	MCL	MCL	MCL	MCL	MCL	MCL	Health	MCL
Action Level (ug/L) <sup>1</sup>		4000	3	1900	43000	1000	2000	3	4	40	50	3	3	100	3	3000	1
<b>Wells Located Outside the Slurry Wall</b>																	
MP-207	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-208	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-238AR	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-241AR	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-249B	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-275	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-276	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-299B	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-303B	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-304	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-304A	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-305	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-305A	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MP-306A	4/6/2015	<10	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
<b>Wells/Underdrains Located Inside the Slurry Wall</b>																	
MP-202	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MP-219A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MP-222B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MP-224B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MP-246	4/7/2015	<10	1.1(J)	<10	0.65(J)	<2	45	6.2	16	3.5	<2	<2	65	60	7.3	5	1.0(J)
MP-248B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
U-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
U-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

<sup>1</sup> Cleanup Standards and Action Levels are relevant to Corrective Measures Implementation (CMI) wells located outside the slurry wall.

J: Estimated results between the method detection limit (MDL) and reporting limit.

NS: Not sampled



**TABLE 2.**  
**CMI COI COMPOUND DETECTIONS AT MP-246**  
**APRIL 2015 MONITORING EVENT**  
**CECOS INTERNATIONAL, INC. ABER ROAD FACILITY**

Well	Constituent of Interest (COI)	Result (ug/L)	Concentration-Based Performance Standards (CBPS) (ug/L)	Screening Level (ug/L)
MP-246	1,1,1-Trichloroethane	55	130,000	1,350
	1,1-Dichloroethylene	16	213	62
	1,2-Dichloroethane	6.2	37	15
	Tetrachloroethylene	65	60,000,000	30,000,000
	Trichloroethylene	7.3	1,200	500
	Vinyl Chloride	1.0(J)	9	9

Notes:

J: Estimated result between the method detection limit (MDL) and practical quantitation limit (PQL).

Per the July 13, 2009 CMI Operations and Maintenance Manual, results for wells MP-246, MP-219A, and MP-248B are to be compared to calculated CBPS and Screening Levels for six COI compounds (1,2-dichloroethane, 1,1-dichloroethylene, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene, and vinyl chloride). Results not listed are non-detect (<MDL).

Note: MP-219 and MP-248B not sampled in April 2015